

AIKEN,PAUL

Scan on 8/7/2013 by Veronica Bedoya of EMG Report

Aiken, Paul

ID #: 080513ak

Peripheral Neuropathy Center Weill Cornell Medical College

Department of Neurology
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Name: Aiken, Paul

Study Date: 8/5/2013

Height: 6'1"

Weight: 165 Lbs

Temp: >32.0 °C

Referring Physician: Dr. Chin

Reason for Referral: 54 year old man with a history of L4-S1 fusion in 1980 and left hemi-laminectomy from L3-S1 in 1991, who presents with dysarthria and dysphagia since April that is progressively worsening. Exam notable for fasciculations in bilateral lower extremities and tongue. Strength is normal by manual muscle testing. Reflexes are 2+ throughout. Referred to rule out motor neuron disease and motor neuropathy.

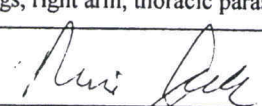
Summary:

- 1) Motor nerve conduction studies reveal normal bilateral tibial, bilateral peroneal, right median, and right ulnar distal motor latencies, compound muscle action potential (CMAP) amplitudes, and conduction velocities, except for mildly prolonged distal latency and moderately prolonged duration of the right median and ulnar distal CMAPs.
- 2) F-wave studies reveal normal bilateral tibial, bilateral peroneal, right median, and right ulnar F-wave responses.
- 3) The bilateral tibial H-reflex responses are normal.
- 4) Sensory nerve conduction studies reveal normal bilateral sural, right median, and right ulnar sensory nerve action potential (SNAP) amplitudes and conduction velocities.
- 5) Blink reflex studies are normal.
- 5) Concentric needle electromyography is significant for a few fasciculation potentials noted in the bilateral tibialis anterior and gastrocnemius, right first dorsal interosseous, right upper trapezius, left T8 paraspinal musculature, and the right genioglossus. There was a decreased recruitment pattern in the right gastrocnemius, left tibialis anterior, and left gastrocnemius muscles; all other muscles have a normal recruitment pattern. Motor unit potential (MUP) durations, amplitudes, and morphology are normal in all muscles tested.

Electrophysiologic Impression:

This is an abnormal study of the legs and right arm.

There is electrophysiologic evidence to support early motor neuron disease (given the fasciculations seen in the legs, right arm, thoracic paraspinal musculature and right tongue).


Nuri Jacoby, M.D., Neurophysiology Fellow
Russell L. Chin, M.D., Associate Attending, Peripheral Neuropathy Center

I have personally reviewed and interpreted this study.

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Motor Nerve Conduction:

Nerve and Site	Latency	Amplitude	Segment	Duration	Distance	Conduction Velocity
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Tibial.L

Ankle	4.4 ms	10.1 mV	Abductor hallucis-Ankle	6.2 ms	80 mm	m/s
Popliteal fossa	13.5 ms	7.3 mV	Ankle-Popliteal fossa	7.4 ms	480 mm	53 m/s

Peroneal.L

Ankle	4.6 ms	8.2 mV	EDB-Ankle	5.2 ms	105 mm	m/s
Fib. head	11.0 ms	7.6 mV	Ankle-Fib. head	6.4 ms	325 mm	51 m/s
Knee	12.8 ms	7.2 mV	Fib. head-Knee	6.6 ms	90 mm	50 m/s

Tibial.R

Ankle	4.2 ms	12.2 mV	Abductor hallucis-Ankle	6.3 ms	75 mm	m/s
Popliteal fossa	13.1 ms	7.2 mV	Ankle-Popliteal fossa	8.0 ms	480 mm	54 m/s

Peroneal.R

Ankle	5.1 ms	5.6 mV	EDB-Ankle	5.5 ms	100 mm	m/s
Fib. head	12.0 ms	4.9 mV	Ankle-Fib. head	6.2 ms	340 mm	49 m/s
Knee	14.0 ms	4.9 mV	Fib. head-Knee	6.5 ms	95 mm	48 m/s

Median.R

Wrist	4.1 ms	15.0 mV	APB-Wrist	8.7 ms	75 mm	m/s
Elbow	9.0 ms	14.7 mV	Wrist-Elbow	8.8 ms	250 mm	51 m/s

Ulnar .R

Wrist	3.3 ms	12.3 mV	ADM-Wrist	7.5 ms	75 mm	m/s
Below elb.	7.1 ms	12.3 mV	Wrist-Below elb.	7.5 ms	230 mm	61 m/s
Above elb.	9.5 ms	11.9 mV	Below elb.-Above elb.	7.5 ms	120 mm	50 m/s

F-Wave Studies

Nerve	F-Latency
Tibial.L	51.2
Peroneal.L	48.9
Tibial.R	52.8
Peroneal.R	51.5
Median.R	30.8
Ulnar .R	31.9

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Sensory Nerve Conduction:

Nerve and Site	Onset Latency	Peak Latency	Amplitude	Segment	Latency Difference	Distance	Conduction Velocity
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Sural.L

Lower leg	2.6 ms	3.2 ms	8 μ V	Ankle-Lower leg	2.6 ms	120 mm	47 m/s
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Sural.R

Lower leg	2.4 ms	3.1 ms	13 μ V	Ankle-Lower leg	2.4 ms	115 mm	47 m/s
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Median.R

Median	3.4 ms	4.4 ms	10 μ V	Digit II (index finger)-Median	3.4 ms	170 mm	50 m/s
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Ulnar .R

Ulnar	2.9 ms	3.5 ms	7 μ V	Digit V (little finger)-Ulnar	2.9 ms	145 mm	50 m/s
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H-waves:

Nerve	Latency	Amplitude (max)
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Tibial.L

H-wave:	30.2 ms	2.6 mV
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Tibial.R

H-wave:	33.4 ms	1.0 mV
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Blink:

Nerve	Stimulation Side	R1 Latency Ipsilateral	R2 Latency Ipsilateral	R2 Latency Contralateral	R2 Latency Difference
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Trigeminal.R

Right:	11.0 ms	37.5 ms	39.4 ms	1.9 ms
Left :	10.8 ms	40.3 ms	42.2 ms	1.9 ms
Difference:	0.2 ms	2.8 ms	2.8 ms	

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Needle EMG Examination:

Muscle	Insertional	Fibs/ PSW	Fasc	Other	Duration	Amplitude	Poly	Recruitment	Pattern	Effort
Tibialis anterior.R	Normal	None	Few		Normal	Normal	None	Normal	Full	Max.
Gastrocnemius.R	Normal	None	Few		Normal	Normal	None	Normal	Reduced	Max.
Vastus lateralis.R	Normal	None	None		Normal	Normal	None	Normal	Full	Max.
Tibialis anterior.L	Normal	None	Few		Normal	Normal	None	Normal	Reduced	Max.
Gastrocnemius.L	Normal	None	Few		Normal	Normal	None	Normal	Reduced	Max.
Vastus lateralis.L	Normal	None	None		Normal	Normal	None	Normal	Full	Max.
Deltoid.R	Normal	None	None		Normal	Normal	None	Normal	Full	Max.
Triceps brachii.R	Normal	None	None		Normal	Normal	None	Normal	Full	Max.
1st dorsal interosseous.R	Normal	None	Few		Normal	Normal	None	Normal	Full	Max.
Trapezius (upper).R	Normal	None	Few		Normal	Normal	None	Normal	Full	Max.
T8 paraspinal.L	Normal	None	Few		Normal	Normal	None	Normal	Full	Max.
Tongue.R	Normal	None	Few		Normal	Normal	None	Normal	Full	Max.